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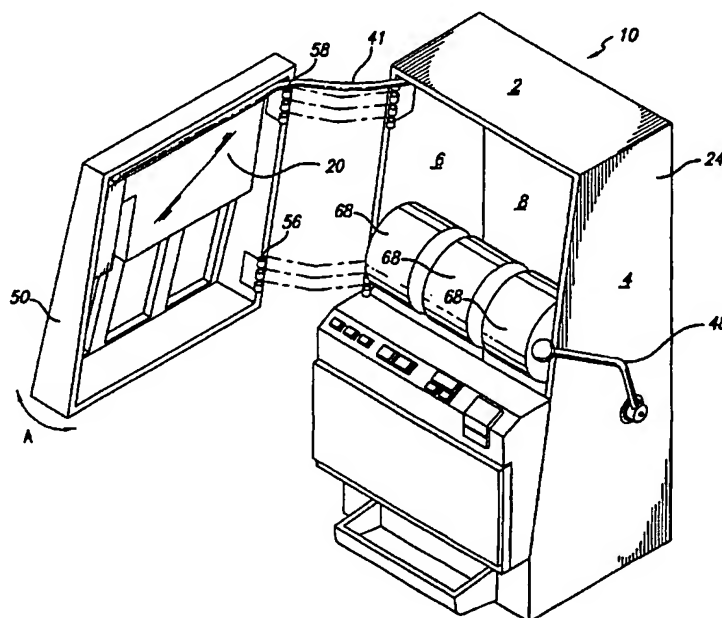
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[Continued on next page]

(54) Title: GAMING MACHINE HAVING A VIDEO SCREEN MOUNTED TO A DOOR



(57) Abstract: A gaming machine having a housing formed as a rectangular box having a top, a pair of spaced parallel sidewalls, and backwall. The sidewall includes a lever handle. The gaming machine has a video display mounted to and supported by a front panel. The display mounted to the panel allows access to storage rearward thereof and allows mechanical reels to be placed adjacent thereto. The close relationship of the video display and reels allows a player to view both the video display and the reels within his or her field of vision.

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**Declarations under Rule 4.17:**

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW, ARIPO patent (GH, GM, KE, LS, MW, MY, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB,

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

GAMING MACHINE HAVING A VIDEO SCREEN MOUNTED TO A DOOR**FIELD OF THE INVENTION**

This invention relates generally to the field of gaming machines and, more particularly, to a video display mounted to the door of a gaming machine.

BACKGROUND OF THE INVENTION

One problem encountered by casino personnel is the difficulty of servicing the inside of gaming machines themselves. Many gaming machines that exist today feature video displays that are contained within the interior of the gaming machines. When the interior of the machine or the video monitor needs to be serviced, casino personnel have a difficult time accessing components that lie behind the monitor because the video monitor effectively blocks their access to the inside of the machine. Further, the physical dimensions, associated with conventional video displays located inside gaming machines, consume a considerable amount of space that could be better allocated for other uses.

Another problem facing casinos is maintaining the player's interest in playing the gaming machines. Because the casino environment is rich in both visual and auditory stimuli, it is relatively easy to divert the attention of a player away from the machine that he or she is currently playing. Accordingly, a successful game maintains the interest of the player for an extended time once a player has embarked in the wagering process.

In this regard, a player can be more easily distracted when he or she is required to divert his or her eyes from the primary game of the machine that he or she is playing to another area of the same machine in order to glean additional information. This often occurs when playing games that have a series of reels oriented at one location on the machine and a bonus game presented on a display located elsewhere. The bonus game display, typically, must be sufficiently spaced from the reels to allow them to spin freely. When playing a machine of this type, the player is required to divert his or her gaze and frequently alter the angulation of his or her head in order to clearly view the bonus game. Such diversions break the player's rhythm during the course of play and make the player susceptible to the lure of other visual stimuli found within the casino environment.

In addition, the volumetric footprint of the game machine, that is the surface area that it accommodates on the floor along with its visual height, sometimes provides visual barriers that break up the panorama of the casino and/or diminish the machine density on the floor.

Prior art solutions to these problems have included providing a display support attached to the gaming machine chassis by a hinge in order to move the display for access to and maintenance of the interior components of the gaming machine, providing a display support that allows for rotation of the video display so that the interior housing of the gaming machine is exposed, and providing a video display located within the gaming machine and having an angled surface for placement adjacent to the mechanical reels. However, each of these prior art systems required the use of a display support which added both cost and complexity to the gaming machine.

Accordingly, those skilled in the art have long recognized the need for a gaming machine having a video display that is mounted in a cost efficient and simple manner that will maximize the game's ability to maintain a player's attention while still providing easy access to the interior of the gaming machine.

SUMMARY OF THE INVENTION

Briefly, and in general terms, the present invention provides a video display mounted to a door of a gaming machine so that no secondary support attached to the chassis is required for mounting the video display, and for providing storage space rearward of the display. Further, the display may be mounted adjacent to mechanical reels without requiring an angled sidewall on the display.

More particularly, by way of example and not necessarily by way of limitation, the present invention provides a gaming machine that has a housing or chassis that defines a hollow interior. The housing or chassis has a door. A video display is mounted to and primarily supported by the door so that when the door is open, the hollow interior is exposed. The door may be attached to the housing or chassis via a hinge so as to allow rotation of the door to expose the interior region of the gaming machine. Instead of a door, the housing or chassis may have a rotatable panel to which the video display can be mounted.

The video display may have a width less than the depth of the housing, thus, allowing storage therebeyond. Alternatively, more than one video display may be mounted to the door or panel. Furthermore, there may be more than one door or panel associated with the gaming machine, each having one or more video displays mounted thereto. Clearly, it is within the scope of the present invention also to have one or more doors that do not have any video

screens mounted therein, in conjunction with doors that do have the displays mounted thereon.

Hence, the present invention satisfies the long existing need to provide easy accessibility to the inside of the gaming machine, as well as, to the back portion of the video display, all without the need for a secondary display support attached to the chassis. It further satisfies the need of allowing placement of the video display adjacent a set of mechanical reels, again, without the need for a secondary display support attached to the chassis and also without the need for a custom-built video display. It will be appreciated by one skilled in the art that custom-built video displays may, nevertheless, also be used in accordance with the present invention.

These and other objects and advantages of the invention will become apparent from the following, more detailed description when taken in conjunction with the accompanying drawings and illustrative embodiments.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an exploded parts perspective view of a gaming machine having a display mounted within the door of the gaming machine, in accordance with the present invention.

FIG. 2 is a front view of a gaming machine, in accordance with the present invention.

FIG. 3 is a partial side view in section showing one attribute of a gaming machine, in accordance with the present invention.

FIG. 4 is a side view partially in section of a gaming machine, in accordance with the present invention.

FIG. 5 is an exploded parts perspective view of a second embodiment of a gaming machine, in accordance with present invention.

FIG. 6 is a front view of the second embodiment of a gaming machine, in accordance with the present invention.

FIG. 7 is a partial side view in section showing one attribute of the second embodiment of a gaming machine, in accordance with the present invention.

FIG. 8 is a side view partially in section of the second embodiment of a gaming machine, in accordance with the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to the drawings, wherein like reference numerals denote like or corresponding parts throughout the various drawing figures, and, more particularly, to FIG 1, a gaming machine 10 is shown as including a housing 24 formed as a substantially
5 rectangular box having a top 2, a pair of spaced parallel sidewalls 4, 6, and a back wall 8. The sidewall 4 includes a lever/handle 48. A plurality of reels 68 are in operative association such that each reel can move as is well known in the art. Each reel 68 includes an annular strip. Collectively, the strips form a cylinder with clearance between the adjacent strips. The housing 24 is enclosed by means of a front panel 50 that is rotatable about a vertical axis that is
10 defined as a line passing through an upper hinge 58 and a lower hinge 56. Alternatively, pivot pins or other means known in the art may be used to attached the front panel 50 to the housing 24. Thus, as shown in FIG. 1, the front panel 50 can rotate in an arc defined by the letter A. The video display 20, preferably an LCD, is mounted securely to and is supported by the front panel 50. This is done by framing the video display with sheet metal, then
15 attaching the sheet metal to the door. However, it will be appreciated by one skilled in the art that any means may be used to mount the video display to the door. A rear face of the video display 20 includes a plug member that nests within a corresponding plug receiver of cable 41. Cable 41 wraps over top of display 20 and splits three ways so that it connects to a power supply, a first processor, and a second processor. The connection provides electrical power
20 and the required signals to the display so that the display can provide visual information. Alternatively, the video display may be plugged into a power supply and a single processor or any number of processors, as will be appreciated by one skilled in the art. It also should be appreciated by one skilled in the art that any screen that may be supported by the door, either off-the-shelf or custom, may be used in accordance with the present invention.

As can be best seen in FIG. 2, the front panel 50 includes a ledge 15 that supports a plurality of decision making buttons 16. The decision making buttons 16 typically include means for making selections during the course of the game, and a button for betting one credit, a button for betting a maximum bet, and a cash out button. The ledge 15 also includes means 14 for entering wagering instrumentalities such as coins, currency, cards, and the like to enable the machine 10 to operate based on credits. Although the ledge 15 appears to be seamless, it is replaceable to accommodate a varying number of buttons, accessories, and the like. A discharge hopper 18 dispenses wagering instrumentalities to the player at appropriate times. The front panel 50 further includes an upper window 52 defined by an opening that exposes the video display 20. In addition, immediately below the upper window 52 are a plurality of smaller windows 54 each of which register over one of the plurality of reels 68. It should also be appreciated by one skilled in the art that any number or type of buttons, accessories, gadgetry, peripherals, and the like may be implemented, in accordance with the present invention. It also should be appreciated by one skilled in the art that the gaming machine 10 and video display(s) 20 can be configured to accommodate any number or variety of desired peripherals.

Because the video display 20 is mounted to the front panel 50, as opposed to the housing 24 of gaming machine 10, as the reels 68 are mounted, the video display is slightly in front of the reels instead of being directly above them, as can be best appreciated in FIG. 3. Therefore, the video display 20 may be placed in very close proximity to the reels 68 from the perspective of player P who views the arrangement from the front of the gaming machine 10. FIG. 3 shows the relationship between the reels 68 and the video display 20. Also, shown in FIG. 3 is that the normal field of vision of player P can encompass the topmost extremity of the video display 20 and the lowermost extremity of the reel mechanism 68. Thus, the entire active game area can be viewed within a single field of vision.

FIG. 4 shows a void or space located rearward of the video display 20 that heretofore has been occupied by the greater depth of a conventional video display. In accordance with the present invention, the space is now available for storage or other uses.

FIGS. 5, 6, 7, and 8 show a second embodiment of the present invention. A gaming machine 80 has a top door 82 and a bottom door 84. The top door 82 supports two video displays 86 and 88. Preferably, a primary game is played on the lower display 86 and a secondary game is played on the upper display 88. Having the video display 86 mounted

within the door 82 instead of having either reels 68 or a video display mounted within the housing 24 of the machine 80, as is typically done, allows for further storage space located within the gaming machine. The bottom door 84 supports a third video display 90. Preferably, the video display 90 displays artwork related to the primary game. However, it should be appreciated by one skilled in the art that any type of information may be displayed on any of the plurality of screens.

It should also be appreciated by one skilled in the art that gaming machines having multiple doors, each door having a single video display or multiple video displays, is within the scope of the present invention. It is also within the scope of the invention to have any combination of doors and associated video displays. It should further be appreciated that multiple video displays may be mounted within a single door or multiple doors and arranged so that the multiple video displays appear as a single video display. Moreover, it is within the scope of the invention to have one or more doors that do not have any video screens mounted therein in conjunction with the doors that do include a display mounted thereon.

In another embodiment, the topmost screen of the gaming machine 10 used to display pay tables. Dynamic pay tables may be used in accordance with the present invention. "Dynamic pay tables," as used herein, means a plurality of different pay schedules that are available to the player. More particularly, in response to a specific triggering event, e.g., the amount wagered, player identity, the player's speed of play, the time of day, the player's birthday, and the like, one of the plurality of pay tables is selected and is highlighted on the video display. In this way, the player can readily determine which pay table is currently used in play. In the past, dynamic pay tables could not be used in mechanical reel systems. However, by combining the mechanical reels with one or more video screens, in accordance with the present invention, such dynamic pay tables can be used in conjunction with mechanical reels.

Hence, the present invention satisfies a long existing need to provide easy accessibility to the inside of a gaming machine, as well as, to the back portion of a video display, all without the need for a secondary display support attached to the chassis. It further provides the ability to place the video display adjacent a set of reels, without the need for a secondary display support attached to the chassis or a custom-built video display. It also provides for the use of dynamic pay tables in combination with mechanical reels.

It will be apparent from the foregoing that, while particular forms of the invention have been illustrated and described, various modifications can be made without departing from the spirit and scope of the invention. Accordingly, it is not intended that the invention be limited except as by the appended claims.

What Is Claimed Is:

1. A gaming machine, comprising:
a housing defining a hollow interior and having a door; and
a video display mounted to the door so that when the door is open, the hollow interior is exposed.
2. A gaming machine, comprising:
a housing defining a hollow interior and having a front rotatable panel allowing access to the hollow interior; and
a video display mounted to the front rotatable panel.
3. A gaming machine, comprising:
a plurality of mechanical reels mounted within an interior of the gaming machine, each reel of annular contour and oriented in side-by-side relationship such that, collectively, outer surfaces of the reels generally define a cylinder; and
5 a video display mounted to a door of the gaming machine so that the video display is adjacent the mechanical reels.
4. The gaming machine as recited in claim 1, wherein the video display has a width less than a depth of the housing allowing storage therebeyond
5. The gaming machine as recited in claim 4 further including a plurality of mechanical reels mounted within the interior of the gaming machine, each reel of annular contour and oriented in a side-by-side relationship such that, collectively, outer surfaces of the reels generally define a cylinder and wherein the video display is adjacent to the reels.

6. A gaming machine, comprising:
a housing defining a hollow interior and having a door;
and at least one video display supported by the door so that when the door is open, the hollow interior is exposed.

7. A gaming machine, comprising:
a housing defining a hollow interior, the housing having at least one door; and a plurality of displays mounted thereon.

8. A gaming machine, comprising:
a chassis defining a game machine interior region;
a door attached to the chassis via a hinge so as to allow rotation of the door to expose the interior region of the gaming machine; and
5 a video display carried by the door.

9. The gaming machine as recited in claim 8, wherein the video display has a width less than a depth of the chassis allowing storage therebeyond.

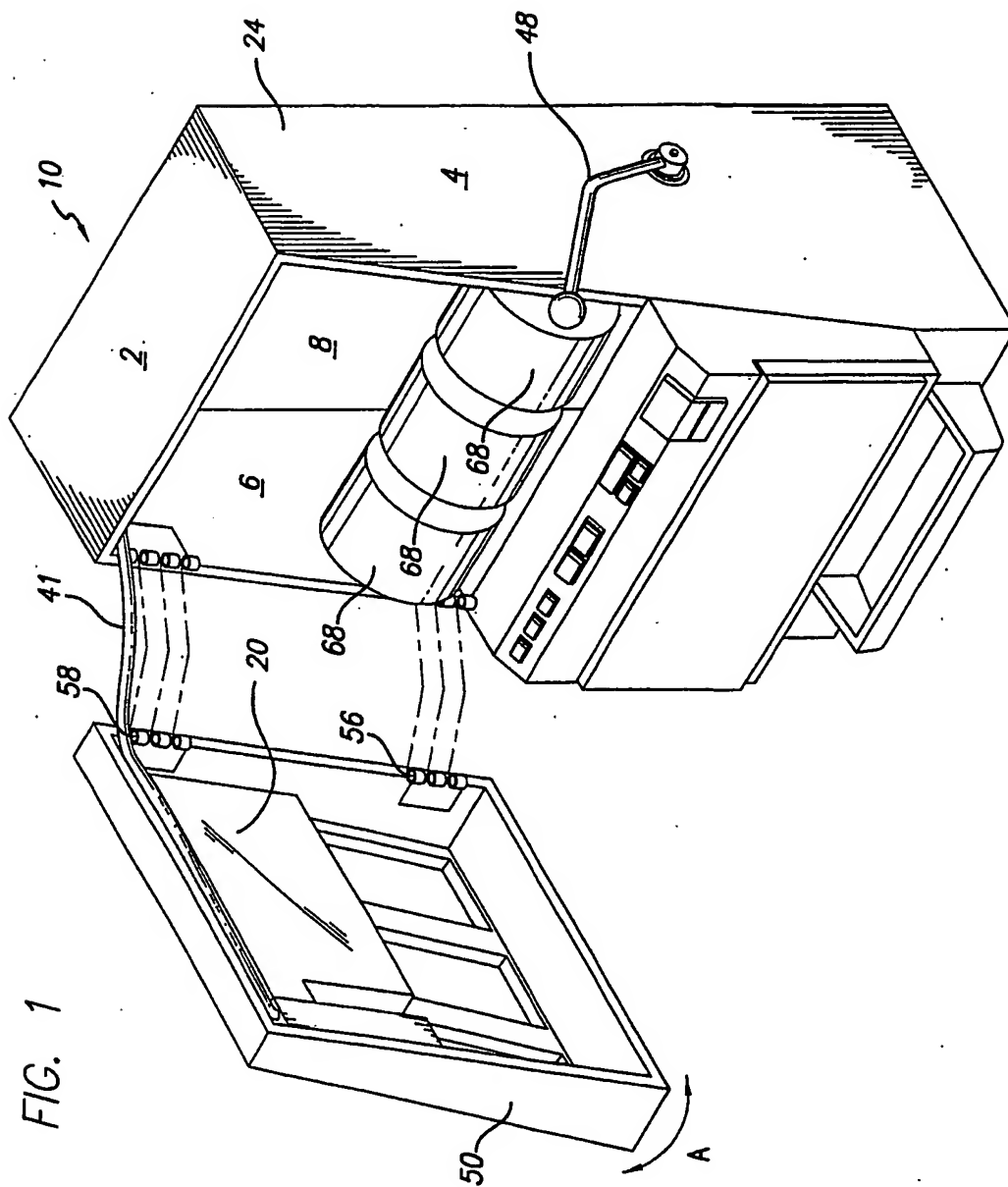
10. The gaming machine as recited in claim 9 further including a plurality of mechanical reels mounted in the interior of the chassis, each reel of annular contour and oriented in a side-by-side relationship such that, collectively, outer surfaces of the reels generally define a cylinder and wherein the video display is adjacent to the reels.

11. The gaming machine as recited in claim 10, wherein the video display is primarily supported by the door.

12. A gaming machine, comprising:
 - a chassis defining a gaming machine interior region;
 - a door attached to the chassis; and
 - a video display fixedly mounted to the door.
13. A gaming machine, comprising:
 - a chassis defining a gaming machine interior region;
 - a door attached to the chassis; and
 - a plurality of video displays mounted in the door.
14. A gaming machine, comprising:
 - a housing defining a hollow interior;
 - a plurality of doors operably attached to the housing; and
 - a video display mounted to a one of the multiple doors so that when the one door is open, the hollow interior is exposed.
15. A gaming machine, comprising:
 - a housing defining a hollow interior having multiple doors; and
 - multiple video displays mounted to each of the multiple doors so that when the multiple doors are open, the hollow interior is exposed.
16. A gaming machine, comprising:
 - a plurality of mechanical reels mounted within an interior of the gaming machine, each reel of annular contour and oriented in side-by-side relationship such that, collectively, outer surfaces of the reels generally define a cylinder;
 - a video display mounted to a door of the gaming machine so that the video display is adjacent the mechanical reels; and

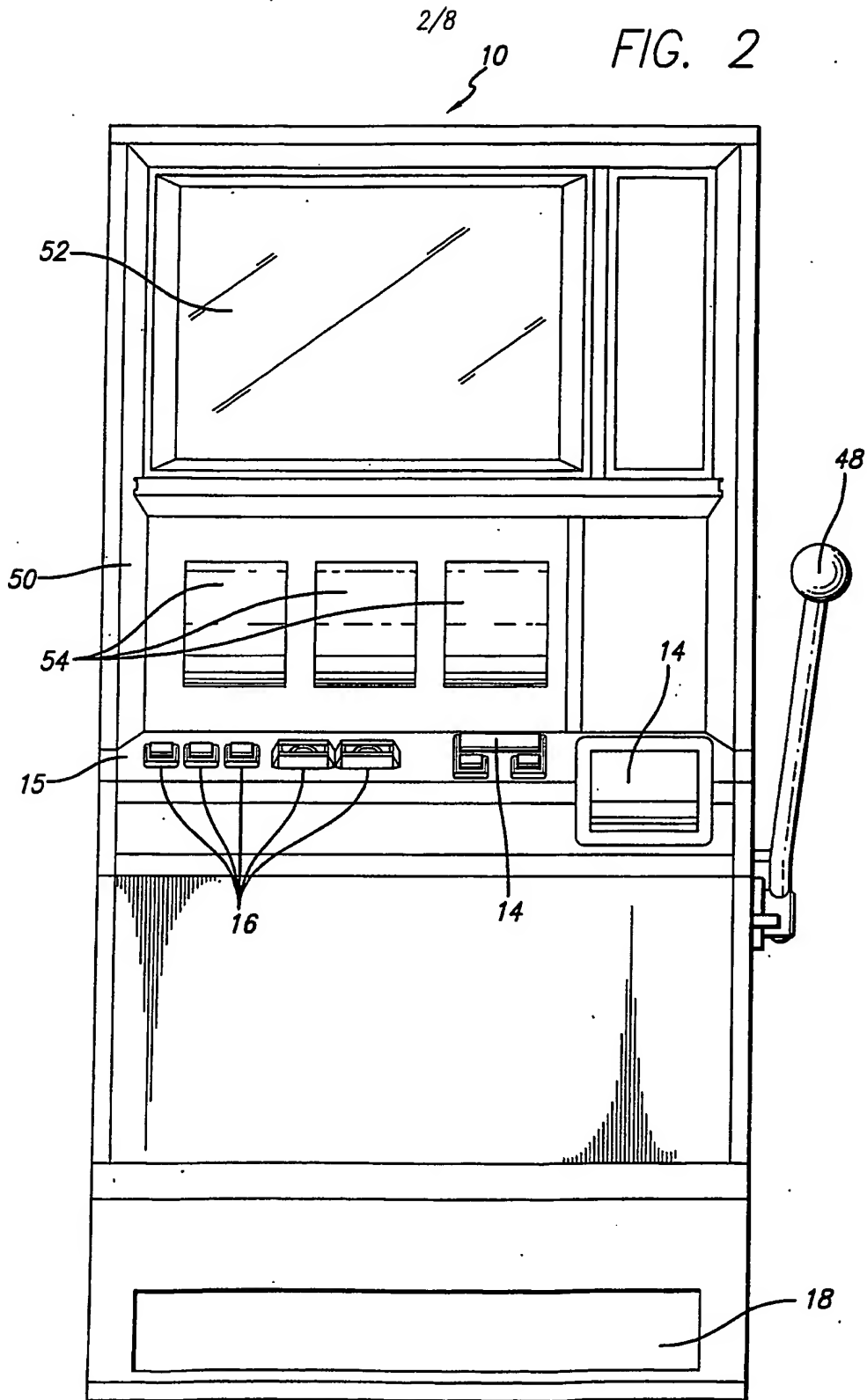
the video display showing one of a plurality of pay tables, in highlighted form,
such pay table being selected upon the occurrence of a triggering event.

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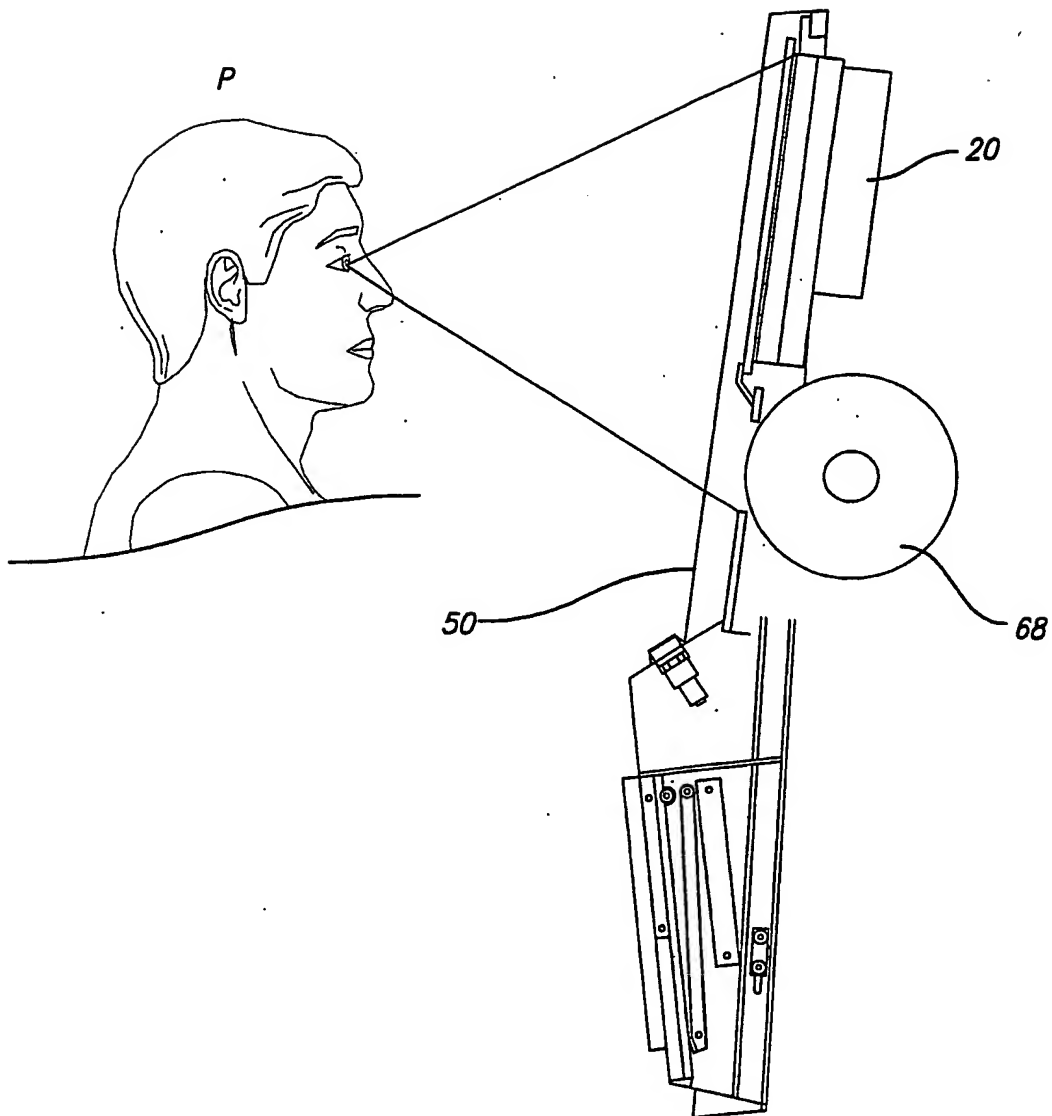
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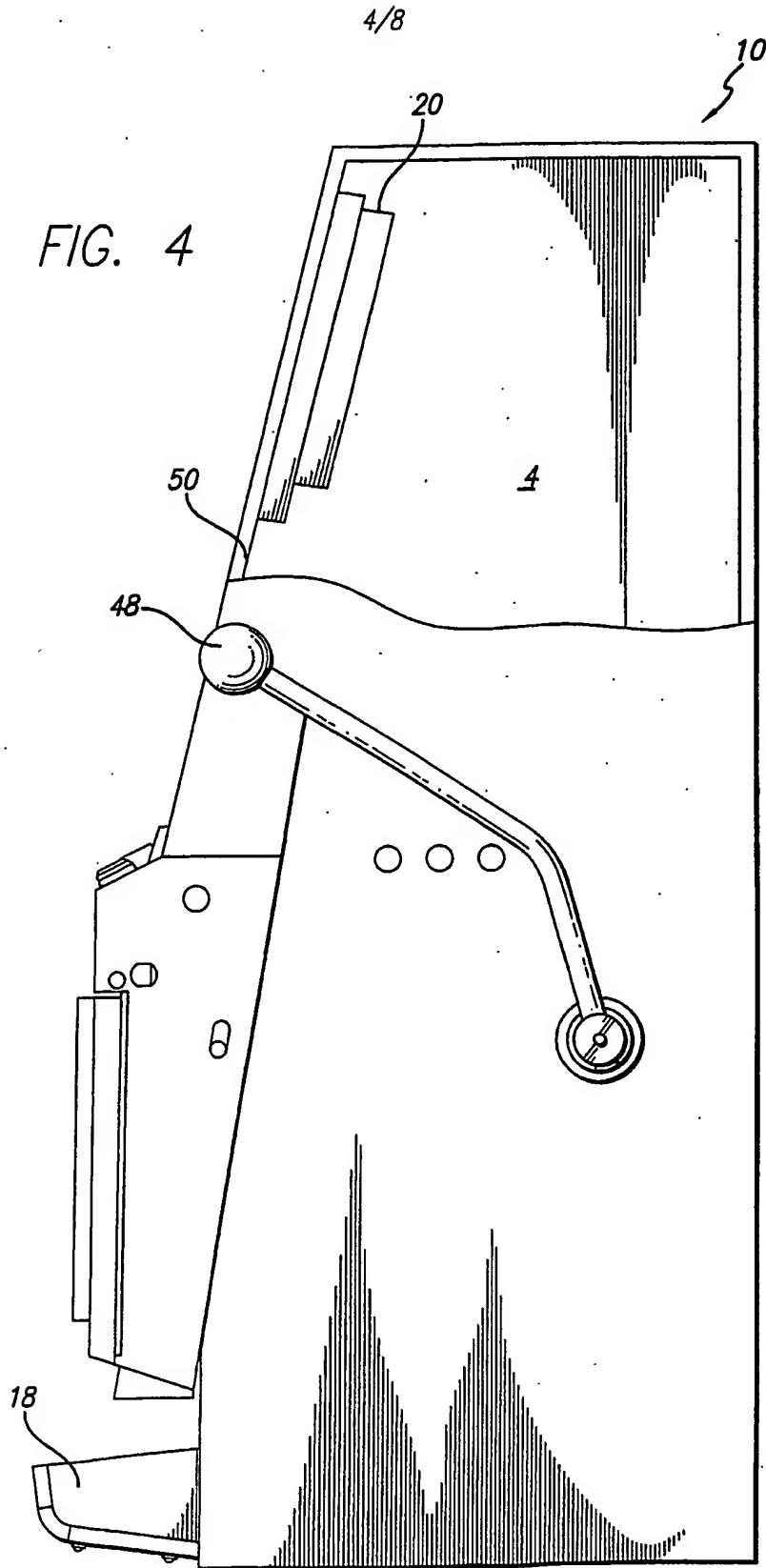
FIG. 2



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FIG. 3





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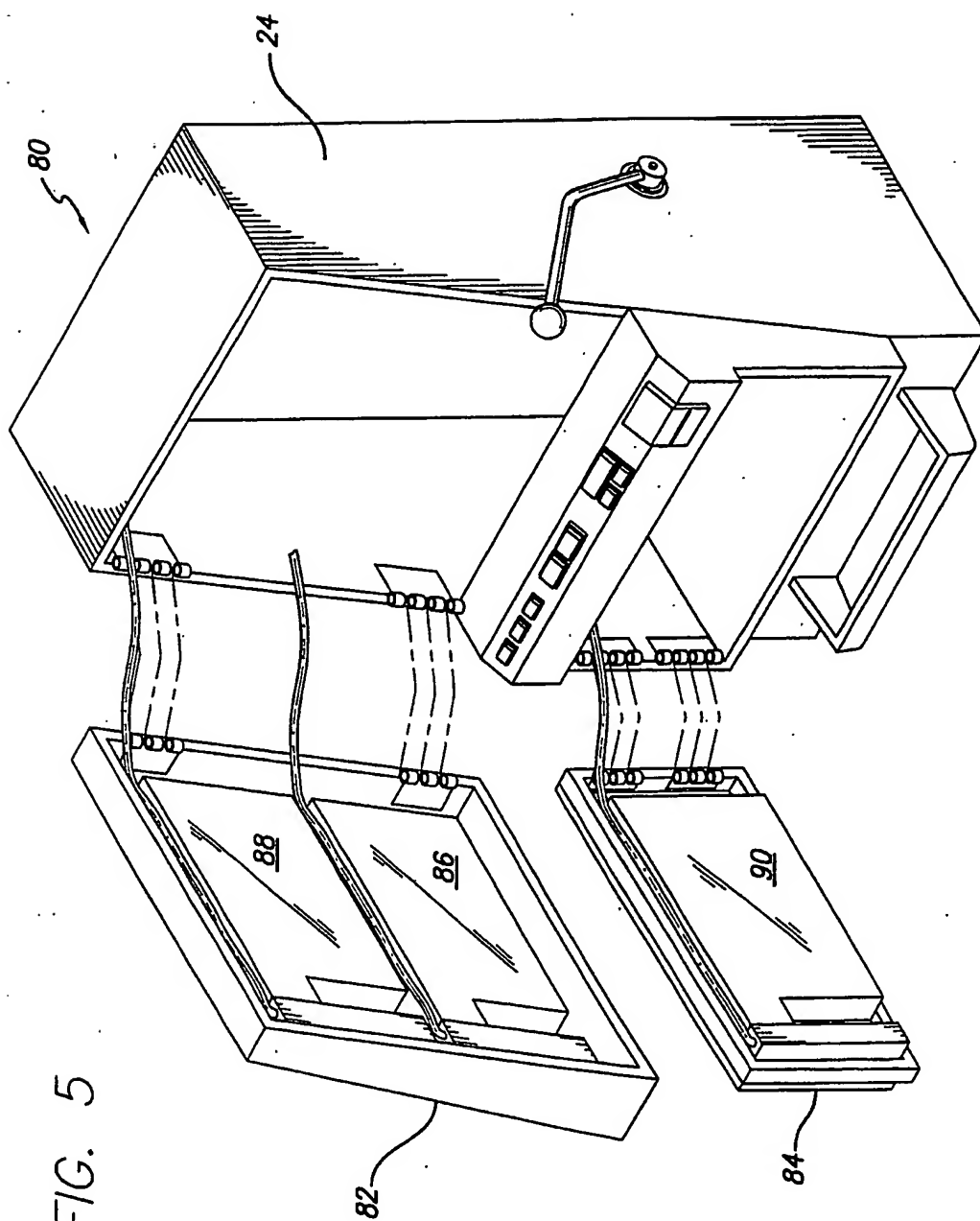
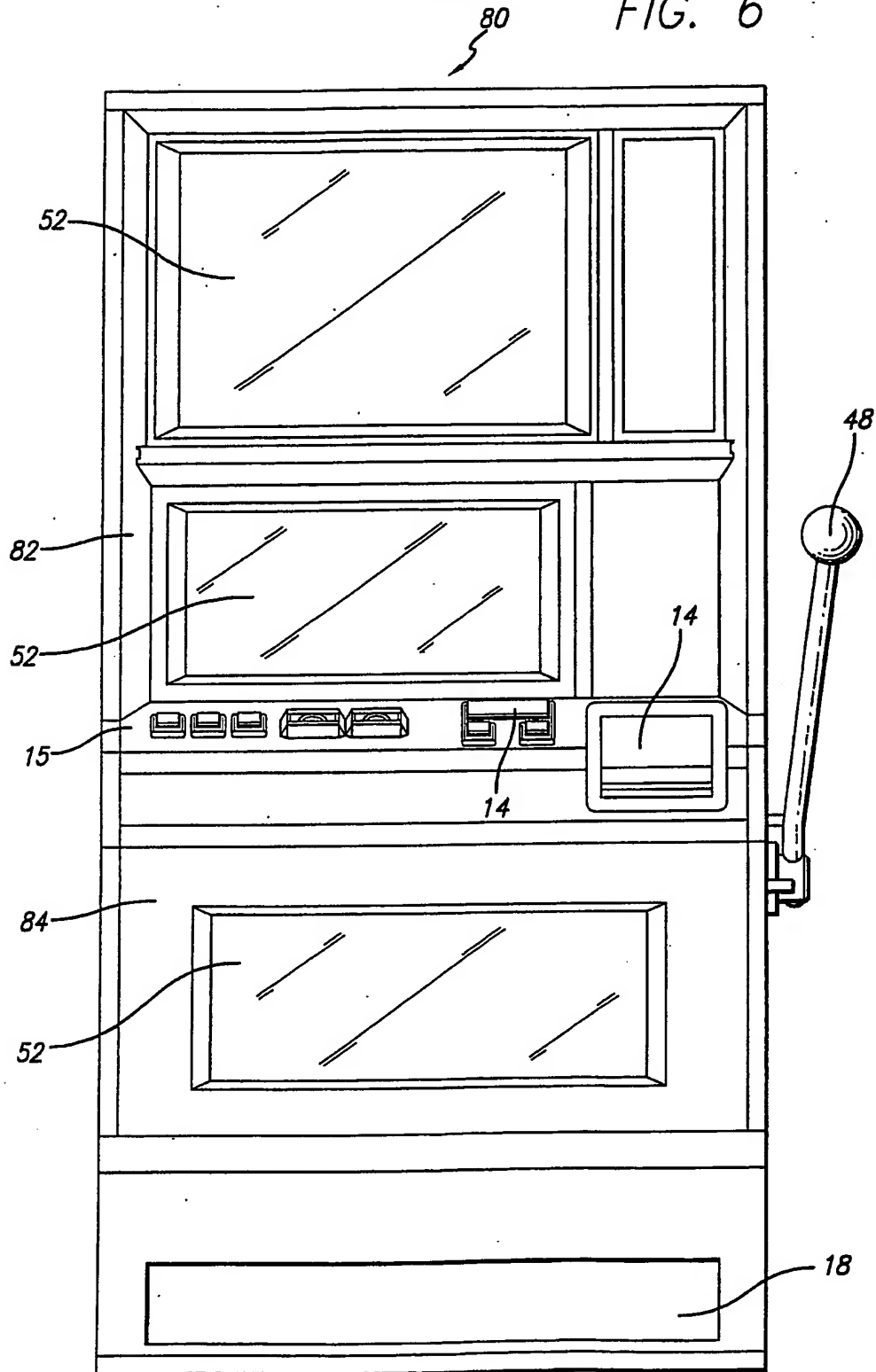


FIG. 5

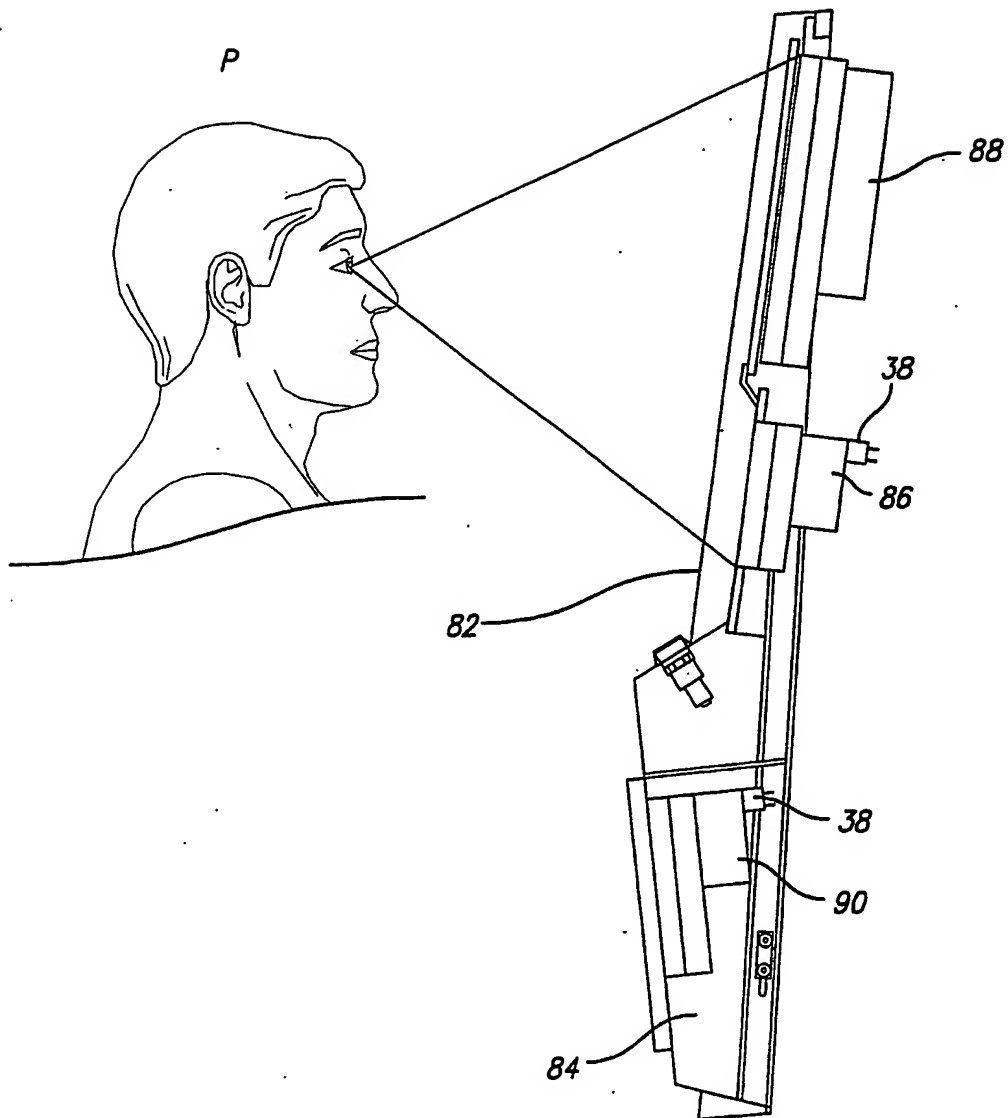
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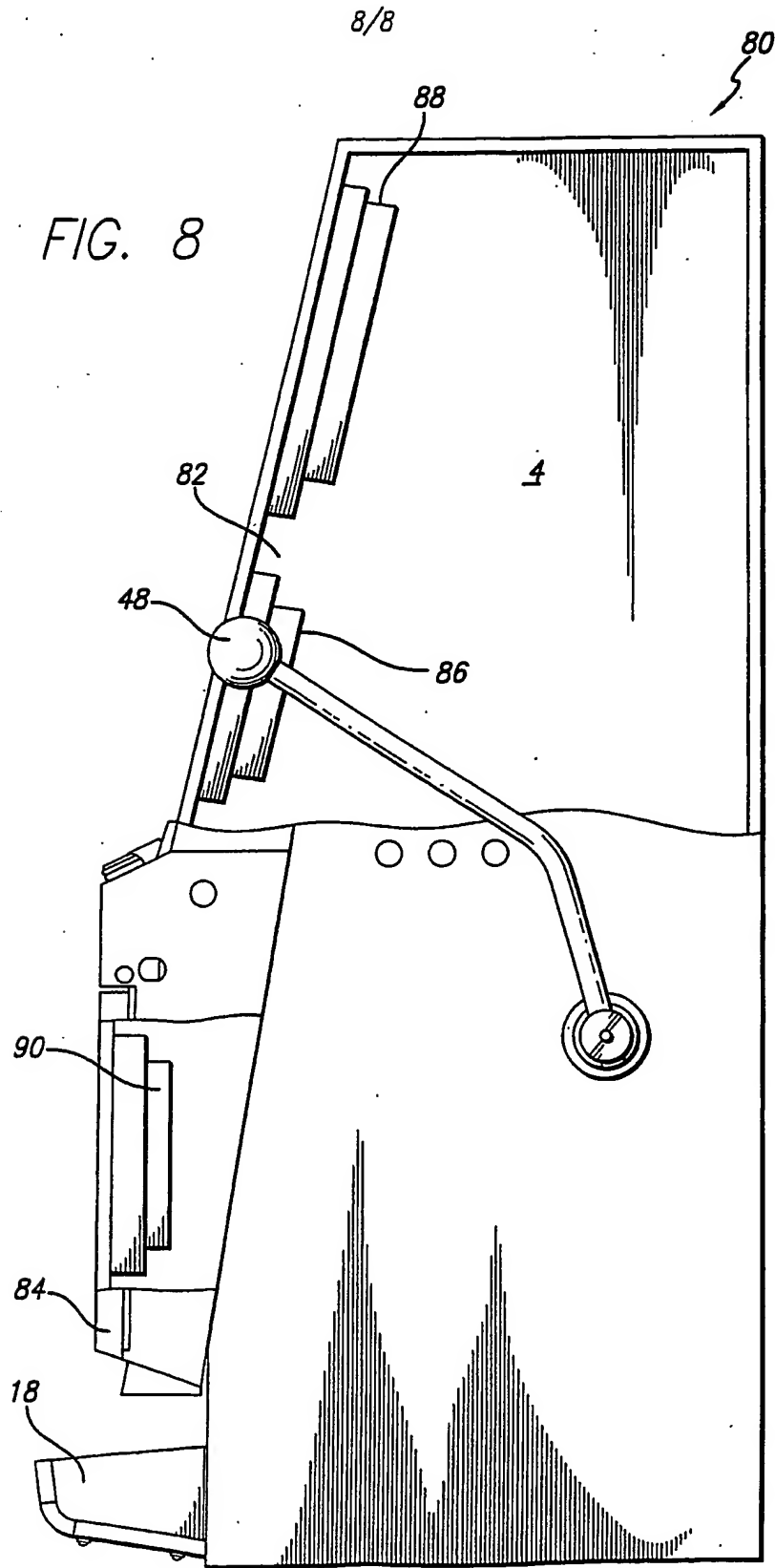
FIG. 6



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FIG. 7





INTERNATIONAL SEARCH REPORT

International application No.

PCT/US02/30789

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A63F 13/00

US CL : 463/46

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 463/46, 16, 17, 18, 19, 20; 273/138.1, 143R

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6,164,645 A (WEISS) 26 December 2000 (26.12.2000), abstract, figures 1-3, column 1, lines 4-10, column 1, line 49-column 2, line 60, column 3, line 30-column 4, line 20, and claims 1-6.	1-16

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

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